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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,148

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EXAMINER

MAYEKAR, KISHOR

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,148	Applicant(s) PHILLIPS ET AL.	
	Examiner Kishor Mayekar	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the cross-reference to related applications in page 1 is missing.

Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the recitation "electrode being selected from a metal mesh and a substrate comprising ... point sources".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the recitation "selected from a metal mesh and a substrate comprising ... point sources" is confusing as to its meaning since the points are

created where the mesh wires cross over. The recitation "a gas inlet ... and providing" needs to be amended such as --a gas inlet ... and for providing to eliminate reference to method of operating the device--.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (US Pat. No. 5,945,072) in view of Burris (US Pat. No. 5,529,760), Iwanaga (US Pat. No. 5,411,713) or Ruan et al. (US Pat. No. 6,146,599). Terada's invention is directed to an apparatus for generating ozone by the chemical conversion of an input oxygen-containing gas. Terada discloses that the apparatus comprises the recited housing, fluid flow passage, at least one electrode, power source, gas inlet and gas outlet as claimed in claim 1, except for the recited serpentinely extending passage of the fluid flow passage (Figs. 1 and 2). Burris, a reference cited by Applicant, teaches in an electric discharge ozone generator, an arrangement where the fluid flow

passage is in zigzag pattern in addition to a simple straight through fluid flow passage (Figs. 1 and 3A). Iwanaga teaches in an electrical discharge ozone generator the same (Fig. 2). Ruan teaches in an electrical discharge ozone generator the same (Fig. 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Terada such that the fluid flow passage is in a zigzag pattern, as per the teachings of Burris, Iwanaga or Ruan. One of ordinary skill in the art would have been motivated to make such modification because the selection of any of known equivalent arrangements of the fluid flow passage in an electrical discharge would have been within the level of ordinary skill in the art.

As to the subject matter of claim 4, the provision of a cooling mechanism, Iwanaga teaches it in Fig. 2. The subject matter as a whole would have been obvious to one having ordinary skill in the-art at the time the invention was made to have modified Terada's teachings as shown by Iwanaga because this would result in producing ozone of high concentration. To the limitation "said cooling mechanism ... and 10 °C", since it is a process limitation, it cannot be given any patentable weight in a claimed apparatus.

As to the subject matter of claim 6, Iwanaga also teaches it in Fig. 2 and c. 3, l. 27-63. Therefore, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to have modified the apparatus of Terada such that the housing is metal, as per the teaching of Iwanaga. One of ordinary skill in the art would have been motivated to make such modification because the selection of any of known equivalent housing constructions of an electrical discharge ozone generator would have been within the level of ordinary skill in the art.

As to the subject matter of each of claims 7-10, Iwanaga also teaches it in Fig. 2 and c. 3, l. 27-63. Also, Ruan teaches the subject matter of each of claims 7-9 in Fig. 8.

7. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 as modified by Burris '760, Iwanaga '713 or Ruan '599 as applied to claims 1, 4 and 6-10 above, and further in view of Erni et al. (US 4,790,980). The differences between the references as applied above and the instant claims are the limitations recited in each of the instant claims. Erni teaches in an electric discharge ozone generator each of the limitations (c. 2, l. 26-43). The subject matter as a whole would have been obvious to one having ordinary skill in the-art at the time the invention was made to have modified the references' teachings as shown by Erni because the selection of any of known

equivalent power sources would have been within the level of ordinary skill in the art.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 as modified by Burris '760, Iwanaga '713 or Ruan '599 as applied to claims 1, 4 and 6-10 above, and further in view of Kitchenman (US Pat. No. 5,554,345). The difference between the references as applied above and the instant claim is the provision of the recited mesh sheets. Kitchenman teaches in an electrical discharge ozone generator the limitation (Fig. 10). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Kitchenman because the selection of any of known equivalent mesh sheets would have been within the level of ordinary skill in the art.

9. Claim 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 as modified by Burris '760, Iwanaga '713 or Ruan '599 as applied to claims 1, 4 and 6-10 above, and further in view of Danschikov et al. (US Pat. No. 5,492,657). The difference between the references as applied above and the instant claim is the provision of the recited fluid pump. Danschikov teaches in a method for processing rubber products with ozone the

limitation (c. 6, l. 54-65). The subject matter as a whole would have been obvious to one having ordinary skill in the-art at the time the invention was made to have modified the references' teachings as shown by Danschikov because the selection of any of known equivalent gas sources would have been within the level of ordinary skill in the art.

10. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 in view Burris '760, Iwanaga '713 or Ruan '599 and in view of Erni '980, for the same reasons as stated in the preceding paragraphs #6 and #7.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 as modified by Burris '760, Iwanaga '713 or Ruan '599 as applied to claims 13-15 above, and further in view of Kitchenman '345, for the same reasons as stated in the preceding paragraph #8.

12. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 as modified by Burris '760, Iwanaga '713 or Ruan '599 as applied to claims 13-15 above, and further in view of Danschikov '657, for the same reasons as stated in the preceding paragraph #9.

13. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada '072 in view of Burris '760, Iwanaga '713 or Ruan '599 and in view of Erni '980, Kitchenman '345, Danschikov '657, for the same reasons as stated in the preceding paragraphs #7-9 and of Kitchenman's teachings of materials of the meshes (see abstract).

Conclusion

14. Claims 1-24 are rejected.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.